

CLAIMS

The invention claimed is:

1. A method of producing an electrical component, comprising the steps of:

folding a plurality of segments of electrically conductive material

- 5 partially around a container to form a plurality of half-turns; and

connecting the plurality of half-turns to the container.

2. The method of claim 1, further comprising the steps of:

cutting the plurality of segments out of a sheet of electrically conductive

- 10 material so that the segments are arranged in a dial-shaped pattern with one end of each segment connected to an inner ring and another end of each segment connected to an outer ring; and

detaching each segment from the inner and outer rings.

3. The method of either of claim 2, wherein the step of folding the plurality of segments includes the steps of:

folding a first portion connected to an intermediate portion of each segment down against a first upper edge of the container; and

folding a second portion connected to the intermediate portion of each segment down against a second upper edge of the container

4. The method of claim 3, further comprising the steps of:

20 folding a third portion connected to the first portion of each segment inward against or outward away from a first lower edge of the container; and

folding a fourth portion connected to the second portion of each segment inward against or outward away from a second lower edge of the container.

5. The method of claim 4, further comprising the step of inserting a ferro-magnetic core into the container.

6. The method of claim 5, further comprising the step of wrapping an electrically conductive wire around the ferro-magnetic core.

- 5 7. The method of claim 5 wherein the step of connecting the plurality of half-turns to the container comprises the step of connecting the plurality of half-turns in two electrically insulated layers.

8. The method of claim 7, wherein the step of connecting the plurality of half-turns in two electrically insulated layers comprises the steps of:

integrating a portion of the plurality of half-turns into the container;

and

attaching the remaining half-turns to an outer surface of the container.

9. The method of claim 8, further comprising the step of connecting the combination of the container and the plurality of half-turns to a mounting structure by connecting the plurality of half-turns to a plurality of electrically conductive tracks on the mounting structure, the half-turns and the conductive tracks forming a plurality of electrically conductive turns.

10. The method of claim 9, further comprising the step of connecting the turns in series, parallel, or a combination of series and parallel.

- 20 11. A method of producing an electrical component, comprising the steps of:

folding a plurality of segments of electrically conductive material into a plurality of u-shaped half-turns; and

connecting the plurality of half-turns to a container.

12. The method of claim 11, further comprising the step of punching the plurality of segments from a sheet of electrically conductive material.
13. The method of claim 11, further comprising the steps of:
- forming the plurality of segments out of a strip of electrically conductive material; and
- detaching each segment individually from the strip of material.
14. The method of claim 13, further comprising the step of inserting a ferro-magnetic core into the container.
15. The method of claim 14, further comprising the step of wrapping an electrically conductive wire around the ferro-magnetic core.
16. The method of claim 15, wherein the step of connecting the plurality of half-turns to the container comprises the step of connecting the plurality of half-turns in two electrically insulated layers.
17. The method of claim 16, wherein the step of connecting the plurality of half-turns in two electrically insulated layers comprises the steps of:
- integrating a portion of the plurality of half-turns into the container; and
- attaching the remaining half-turns to an outer surface of the container.
18. The method of claim 17, further comprising the step of connecting the combination of the container and the plurality of half-turns to a mounting structure by connecting the plurality of half-turns to a plurality of electrically conductive tracks on the mounting structure, the half-turns and the conductive tracks forming a plurality of electrically conductive turns.

19. The method of claim 18, further comprising the step of connecting the turns in series, parallel, or a combination of series and parallel.

20. A method of producing an electrical component, comprising the steps of:

inserting a plurality of u-shaped half-turns of electrically conductive

5 material into a plurality of seats defined in a container; and

connecting the plurality of half-turns to the container.

21. The method of claim 20, further comprising the steps of:

producing a plurality of segments of electrically conductive material

detachably connected to one another;

10 folding the plurality of segments to form the plurality of u-shaped half-

turns; and

separating the plurality of u-shaped half-turns from each other.

22. The method of claim 21, further comprising the steps of:

producing a plurality of panels connected together linearly using a

15 plurality of joining portions; and

folding the plurality of panels and joining portions together to form the container.

23. The method of claim 22, wherein the plurality of half-turns are connected to the container using a cover, resin bonding, or both.

20 24. The method of claim 23, wherein the step of inserting the plurality of half-turns into a plurality of seats comprises the step of:

inserting the half-turns into a plurality of grooves defined in an outer side wall of the container and a plurality of grooves defined in an inner side wall of

the container.

25. The method of claim 23, wherein the step of inserting the plurality of half-turns into a plurality of seats comprises the step of:

inserting the half-turns into a plurality of grooves defined in a

5 plurality of outer side walls of the container and a plurality of grooves extending partially along a plurality of front walls of the container.

26. The method of claim 25, further comprising the step of inserting a plurality of resilient tabs defined in each half-turn into a plurality of recesses defined in each outer side wall of the container.

10 27. The method of claim 26, further comprising the step of inserting a ferro-magnetic core into the container.

28. The method of claim 27, further comprising the step of wrapping an electrically conductive wire around the ferro-magnetic core.

15 29. The method of claim 28, further comprising the step of connecting the combination of the container and the plurality of half-turns to a mounting structure by connecting the plurality of half-turns to a plurality of electrically conductive tracks on the mounting structure, the half-turns and the conductive tracks forming a plurality of electrically conductive turns.

30. The method of claim 29, further comprising the step of connecting the turns in 20 series, parallel, or a combination of series and parallel.

31. A method of producing an electrical component, comprising the steps of:

applying a bonding substance to a support structure; and

connecting a plurality of u-shaped half-turns to the support structure

using the bonding substance.

32. The method of claim 31, further comprising the step of connecting a thermal dissipater to the support structure.

33. The method of claim 32, further comprising the step of removing a detachable

5 plate from the support structure.

34. The method of claim 33, further comprising the step of applying a metallization layer to one side of the support structure.

35. The method of claim 34 further comprising the step of inserting a ferro-magnetic core into a u-shaped opening formed by the plurality of u-shaped half-turns.

36. The method of claim 35, further comprising the step of covering the ferro-magnetic core with an insulating paint.

37. The method of claim 36, further comprising the step of wrapping an electrically conductive wire around the ferro-magnetic core.

38. The method of claim 37, further comprising the step of connecting the combination of the support structure and the plurality of half-turns to a mounting structure by connecting the plurality of half-turns to a plurality of electrically conductive tracks on the mounting structure, the half-turns and the conductive tracks forming a plurality of electrically conductive turns.

39. The method of claim 38, further comprising the step of connecting the turns in 20 series, parallel, or a combination of series and parallel.

40. An electrical component, comprising:

a container; and

a plurality of segments of electrically conductive material connected to

the container forming a plurality of u-shaped half-turns, each half-turn including an inner portion extending past an inner lower edge of the container and an outer portion extending past an outer lower edge of the container.

41. The electrical component of claim 40, wherein the portions extending past the

5 lower edges of the container are folded toward each other or folded away from each other.

42. The electrical component of claim 41, wherein the plurality of half-turns are separated into two electrically insulated layers of half-turns.

43. The electrical component of claim 41, wherein the plurality of half-turns are integrated into the container.

44. The electrical component of claim 43, further comprising a ferro-magnetic core inserted into the container.

45. The electrical component of claim 44, further comprising an insulated electrically conductive wire wrapped around the ferro-magnetic core.

46. The electrical component of claim 45, further comprising;

a mounting structure having a plurality of electrically conductive tracks;

and

wherein the combination of the container and the plurality of half-turns is mounted on the mounting structure by connecting the half-turns to the conductive tracks, the half-turns and conductive tracks forming a plurality of turns.

20 47. The electrical component of claim 46, wherein the turns are connected in series, parallel, or a combination of series and parallel.

48. An electrical component, comprising:

a container having a plurality of seats defined therein; and

connected to the container using the seats.

49. The electrical component of claim 48, wherein:

5 each u-shaped half-turn includes a intermediate portion connected to two arms; and

each vertical arm further includes a tab extending outward away from each arm.

50. The electrical component of claim 49, wherein the u-shaped half-turns are connected to the container using a cover, resin bonding, or both.

51. The electrical component of claim 50, wherein the plurality of seats comprises a plurality of grooves defined in an outer surface of the container and an inner surface of the container.

52. The electrical component of claim 50, wherein the plurality of seats comprise a plurality of grooves defined in a plurality of outer side walls of the container and a plurality of grooves extending partially along a plurality of front walls of the container.

53. The electrical component of claim 52, further comprising:

a plurality of resilient tabs defined in each half-turn;

20 a plurality of recesses defined in the container; and

wherein each resilient tab is inserted into one of the recesses.

54. The electrical component of claim 53, further comprising a ferro-magnetic core inserted into the container.

55. The electrical component of claim 54, further comprising an electrically conductive wire wrapped around the ferro-magnetic core.

56. The electrical component of claim 55, further comprising:

a mounting structure having a plurality of electrically conductive tracks;

5 and

wherein the combination of the container and the plurality of half-turns is mounted on the mounting structure by connecting the half-turns to the conductive tracks, the half-turns and conductive tracks forming a plurality of turns.

57. The electrical component of claim 56, wherein the turns are connected in series, parallel, or a combination of series and parallel.

58. An electrical component, comprising:

a support structure; and

5 a plurality of half-turns of electrically conductive material connected to the support structure, each u-shaped half-turn including an intermediate portion connected to two arms, and each vertical arm further including a tab extending outward away from each arm.

59. The electrical component of claim 58, wherein the support structure includes a detachable plate.

60. The electrical component of claim 59, wherein the support structure includes 20 electrically conductive material covered with an insulating layer.

61. The electrical component of claim 60, further comprising a ferro-magnetic core inserted into a u-shaped opening formed by the plurality of half-turns.

62. The electrical component of claim 61, further comprising an insulated

electrically conductive wire wrapped around the ferro-magnetic core.

63. The electrical component of claim 62, wherein the ferro-magnetic core is covered with insulating paint.

64. The electrical component of claim 63, further comprising a thermal dissipater
5 connected to the support structure.

65. The electrical component of claim 64, further comprising:

 a mounting structure having a plurality of electrically conductive tracks;
and

 wherein the combination of the support structure and the plurality of
40 half-turns is mounted on the mounting structure by connecting the half-turns to the
 conductive tracks, the half-turns and conductive tracks forming a plurality of turns.

66. The electrical component of claim 65, wherein the turns are connected in series,
parallel, or a combination of series and parallel.